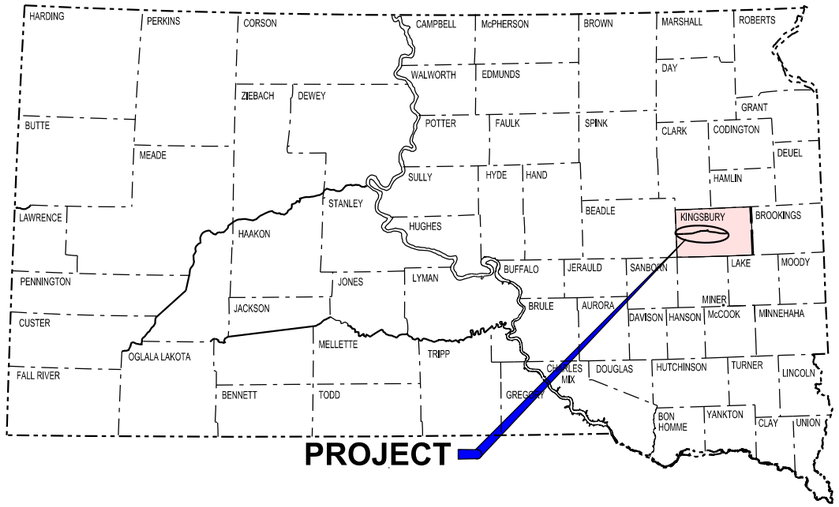


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT 014–191 & 025–191

US HIGHWAYS 14
SD HIGHWAYS 25
KINGSBURY COUNTY
HURON AREA
RESURFACE SHOULDER &
ASPHALT INTERSECTING ROADS/APPROACHES
PCN i4rk & i4rl

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	1	13

Plotting Date: 05/20/2017

INDEX OF SHEETS

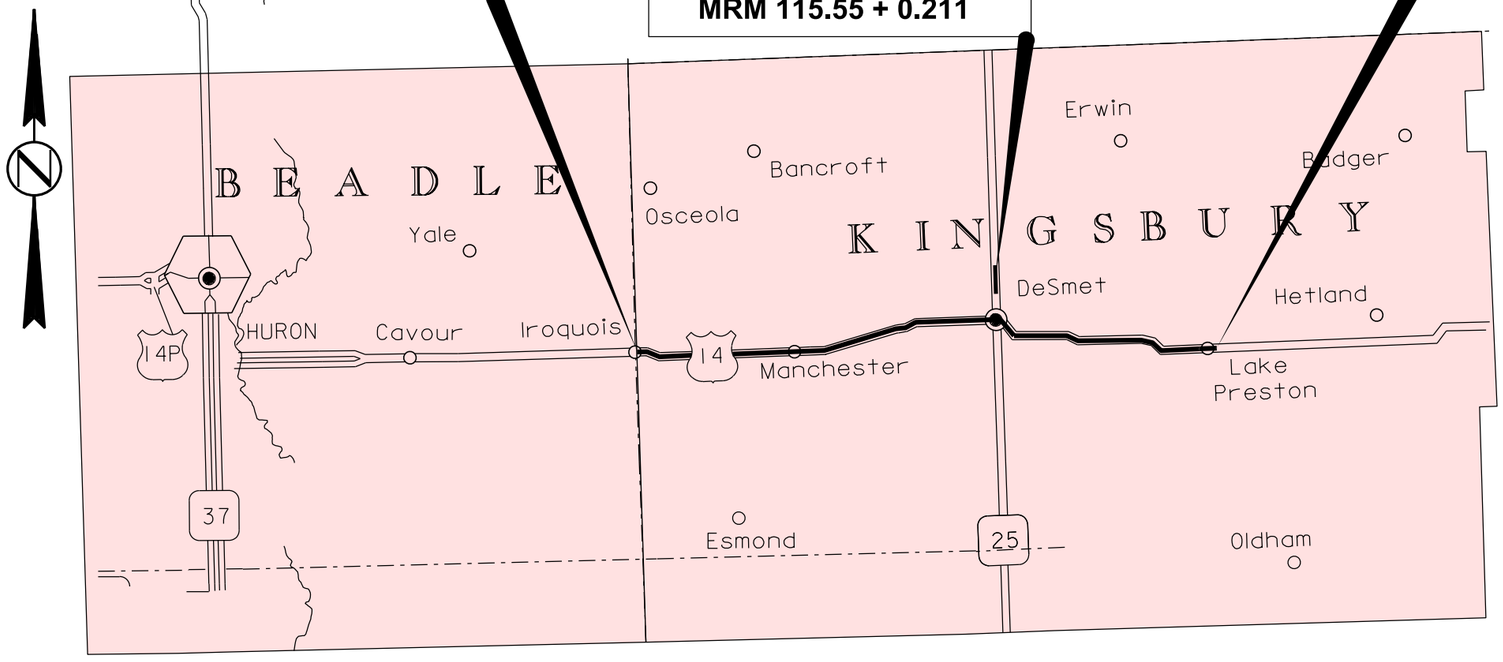
Sheet 1-2	Title Sheet & Layout Map
Sheet 3-4	Estimate of Quantities & Environmental Commitments
Sheets 5-7	Shoulder Resurfacing Segment Layout
Sheets 8	Rates of Materials
Sheets 9-10	Plan Notes
Sheets 11-13	Traffic Control & Standard Plates

BEGIN PROJECT: 014-191
PCN i4RK
US 14
MRM 363.87 + 0.125

BEGIN PROJECT:
025-191
PCN i4RL
SD 25
MRM 115.41 + 0.000

END PROJECT:
025-191
PCN i4RL
SD 25
MRM 115.55 + 0.211

END PROJECT: 014-191
PCN i4RK
US 14
MRM 388.46 + 0.000

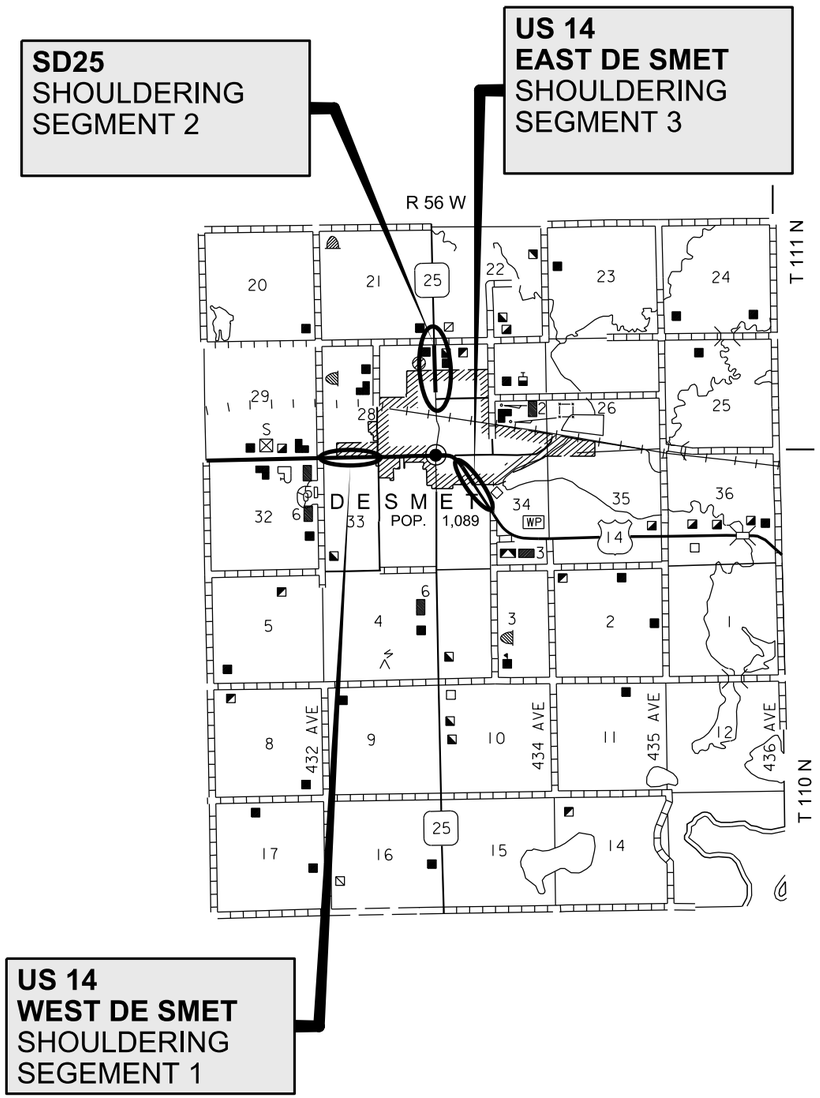


STORM WATER PERMIT
(None required)

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	2	13

Plotting Date: 05/20/2017

US HIGHWAY 14 & SD HIGHWAY 25
SHOULDER RESURFACING SEGMENTS



US14 ADT (2014) 1,607
SD25 ADT (2014) 1,430

PLOT SCALE - 1:7000

PLOTTED FROM - TRHJINT05

PLOT NAME - 4

FILE - ...\DESKTOP\14RK & 14RL\TITLE.DGN

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	3	13

PCN I4RK

	BID ITEM NUMBER	ITEM	QUANTITY	UNIT
*	009E0010	Mobilization	Lump Sum	LS
*	260E1050	Base Course, Salvaged Asphalt Mix	1,575.0	Ton
*	270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	973.0	Ton
*	320E1200	Asphalt Concrete Composite	2,176.0	Ton
*	332E0100	Cold Milling Asphalt Concrete and Placing Cold Milled Material	7,222	SqYd
*	634E0010	Flagging	24.0	Hour
*	634E0020	Pilot Car	12.0	Hour
*	634E0110	Traffic Control Signs	290.2	SqFt
*	634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

*** - Denotes Non-Participating**

PCN I4RL

	BID ITEM NUMBER	ITEM	QUANTITY	UNIT
*	009E0010	Mobilization	Lump Sum	LS
*	270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	602.0	Ton
*	320E1200	Asphalt Concrete Composite	602.0	Ton
*	634E0010	Flagging	24.0	Hour
*	634E0020	Pilot Car	12.0	Hour
*	634E0110	Traffic Control Signs	290.2	SqFt
*	634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

*** - Denotes Non-Participating**

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications and Special Provisions as included in the Proposal.

ESTIMATE OF QUANTITIES AND ENVIRONMENTAL COMMITMENTS

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	4	13

ENVIRONMENTAL COMMITMENTS

An Environmental Commitment is a measure that SDDOT commits to implement in order to avoid, minimize, and/or mitigate a real or potential environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency mentioned below with permitting authority can influence a project if perceived environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office. The environmental commitments associated with this project are as follows:

COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES

COMMITMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, cease construction activities in the affected area until the Whooping Crane departs and contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT C: WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the SDDOT Environmental Office. Thoroughly wash all construction equipment before entering South Dakota to reduce the risk of invasive species introduction into the project vicinity.

The Contractor shall not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor shall obtain the necessary permits from the regulatory agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE) prior to executing water extraction activities.

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

COMMITMENT H: WASTE DISPOSAL SITE

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".

2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The SDDOT has obtained concurrence with the State Historical Preservation Office (SHPO or THPO) for all work included within the project limits and all department designated sources and designated option material sources, stockpile sites, storage areas, and waste sites provided within the plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require review of cultural resources impacts. This work includes, but is not limited to: staging areas, borrow sites, waste disposal sites, and all material processing sites.

The Contractor shall arrange and pay for a cultural resource survey and/or records search. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor shall provide ARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that artifacts have not been found on the site.

The Contractor shall submit the records search or cultural resources survey report and if the location of the site is within the current geographical or historic boundaries of any South Dakota reservation to SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3180). SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

If evidence for cultural resources is uncovered during project construction activities, then such activities shall cease and the Project Engineer shall be immediately notified. The Project Engineer will contact the SDDOT Environmental Engineer in order to determine an appropriate course of action.

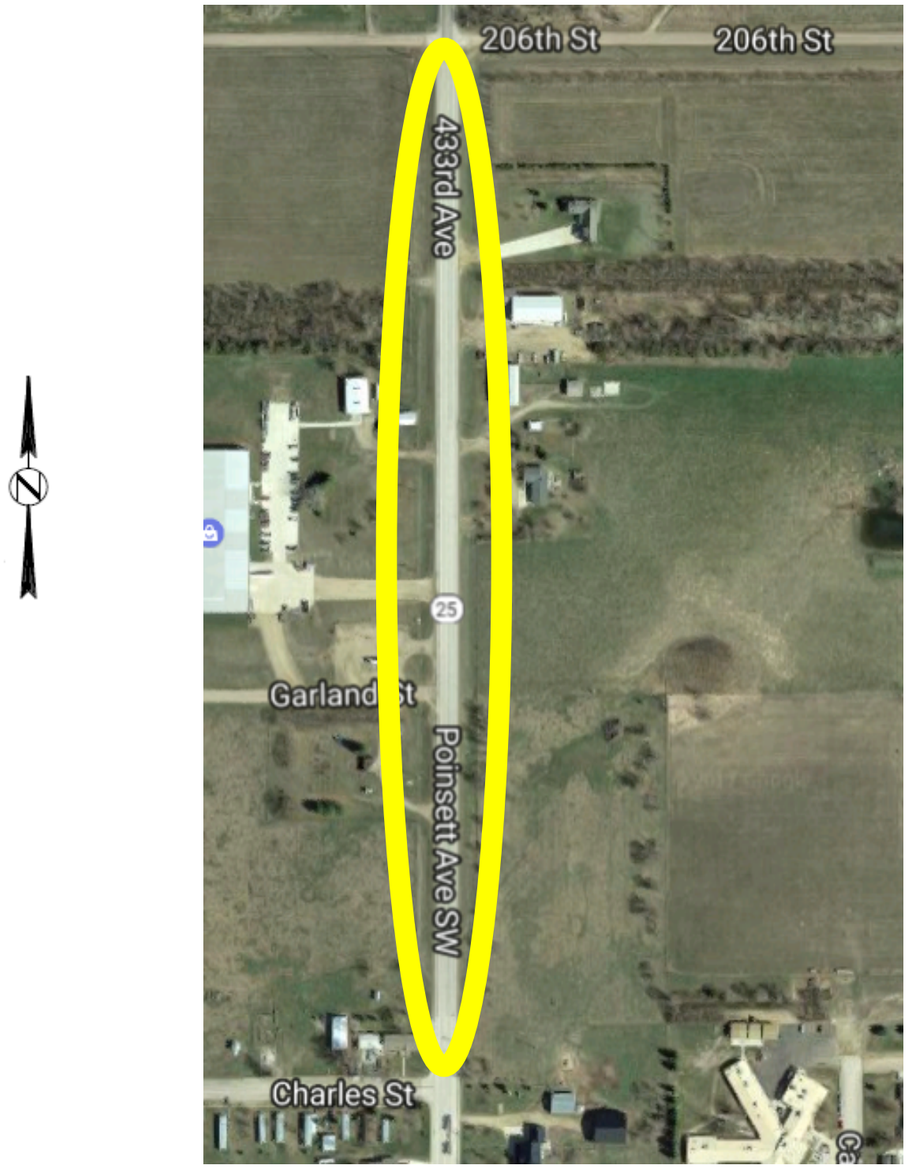
SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for staging areas, borrow sites, waste disposal sites, or material processing sites that affect wetlands, threatened and endangered species, or waterways. The Contractor shall provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	5	13

SHOULDERING SEGMENT 1
US HWY 14

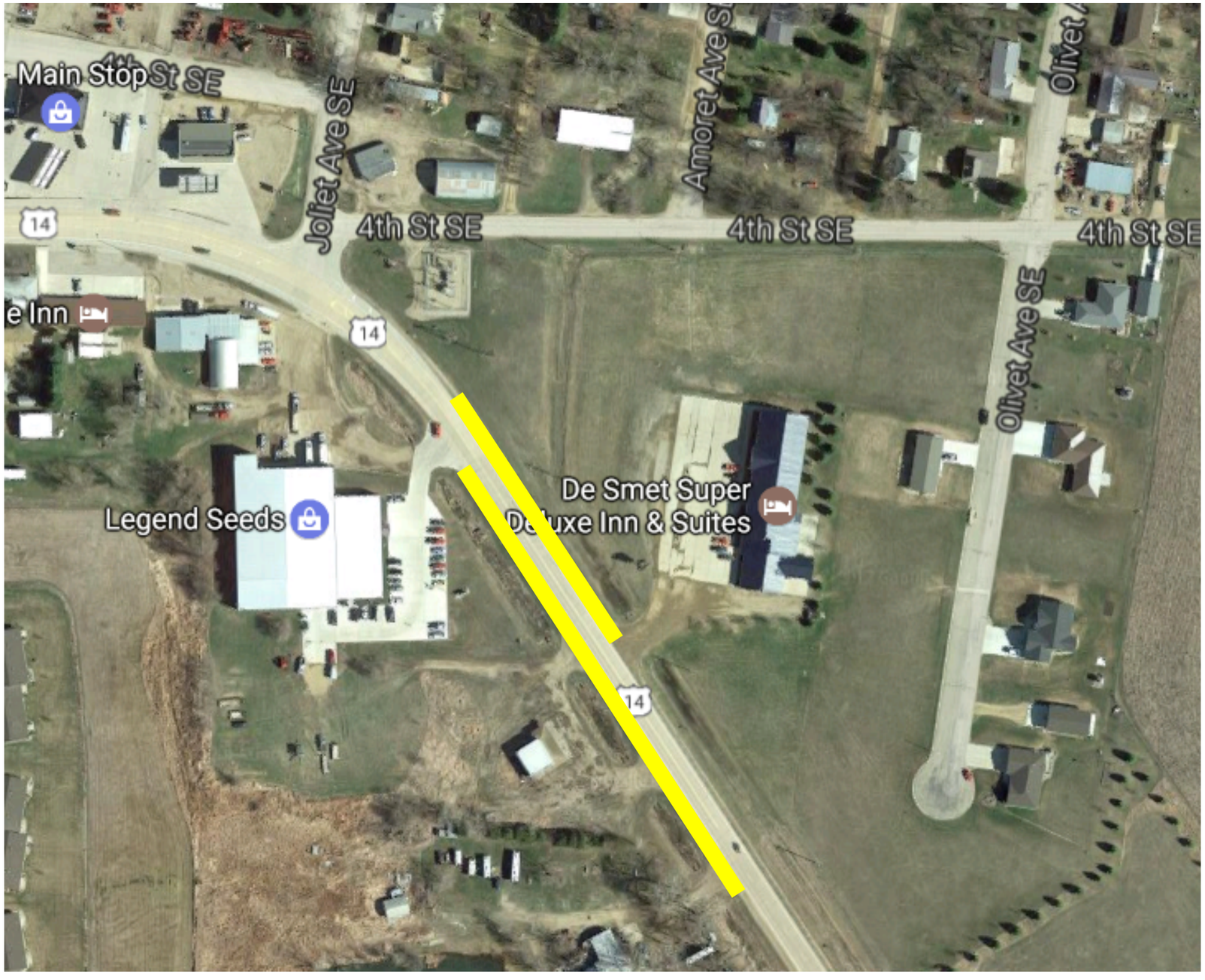
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	6	13

SHOULDERING SEGMENT 2
SD HWY 25



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	014-191 & 025-191	7	13

SHOULDERING SEGMENT 3
US HWY 14



TYPICAL IN PLACE SECTION & APPROXIMATE LOCATIONS

RATES OF MATERIALS

SHOULDER RESURFACING SECTION (HWY 14 & HWY 25)

The Estimate of Quantities is based on the following quantities of material per mile for one shoulder.

3" Asphalt Concrete Composite Lift - (Estimated at 7' Wide, with a 2' sluff)

780 Tons

MC-70 Asphalt for Prime at the rate of **6.3** tons applied **9** feet wide.
(9 feet wide each shoulder) (Rate = 0.30 Gal./Sq.Yd.)

Typical Section for Asphalt Concrete Composite Resurfacing:

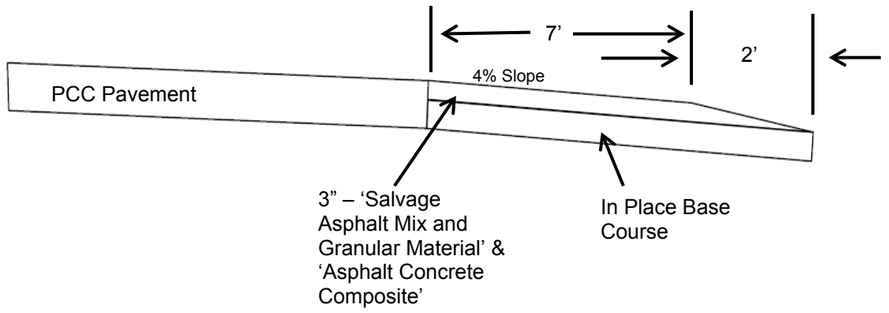


TABLE OF QUANTITIES (Information Only)

Section	Asphalt Concrete Composite (tons)	Cold Milling and Placing AC Material (SY)	Salvage and Stockpile Asphalt Mix And Granular Material (tons)	Base Course, Salvaged Asphalt Mix (tons)
Iroquois to Manchester (11 Intersecting Roads/Entrances)	509	3056	-	-
Manchester to De Smet (3 Intersecting Roads/Entrances)	139	833	-	-
De Smet to Lake Preston (12 Intersecting Roads/Entrances)	555	3333	-	-
SEGMENT 1: West of De Smet (Shoulder EBL & WBL) 2603' per shoulder for HWY 14	819	-	819	819
SEGMENT 2: North of De Smet (Shoulder NBL & SBL) Approximately 1912' per lane for HWY 25	602	-	602	602
SEGMENT 3: East of De Smet (Shoulder EBL & WBL) Approximately 350' in WBL & 630' EBL for HWY 14	154	-	154	154
Totals	2778	7222	1575	1575

RESIDENTIAL APPROACHES & PAVED INTERSECTING ROADS

*Residential entrances and county roads paved beyond the ROW shall be paved to the ROW, with reference to the milling detail in the notes section.

**All residential entrances with granular material extending through the ROW shall be paved to the radius of the entrance.

***All intersecting roads with an asphalt pavement approach and granular material extending beyond ROW shall be paved to the radius.

****See Standard Plate 320.10 and milling detail in notes section for reference.

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

SEQUENCE OF OPERATIONS

1. Install Traffic Control.
2. Complete Cold Milling and Asphalt Concrete Composite Placement on intersecting roads and approaches
3. Complete Asphalt Concrete and Granular Surfacing Removal
4. Complete cleanup work.

GENERAL NOTES

Once work inconveniences traffic, it shall be pursued in a near continuous, expeditious manner to its completion. Any work that restricts the motorist from driving the posted speed limit, reduces existing roadway width, or causes a potentially unsafe condition due to Contractor operations such as frequent movement of equipment or materials on or through the project, is considered to be an inconvenience to traffic.

PROJECT WORK HOURS

The Contractor may perform work on the roadway during daylight hours only, unless additional hours are approved by the Engineer. Daylight hours are considered to be sunrise until sunset. Traffic shall be returned to normal driving lanes during non-working hours.

TRAFFIC CONTROL

All traffic control sign locations shall be set in the field by the Contractor and verified by the Engineer prior to installation.

Certified flaggers properly attired and preceded by FLAGGER symbol signs, will be required where work activity and/or equipment present a hazard to the workers, a hazard to through traffic, or encroaches into a driving lane.

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost of this work shall be incidental to the various contract items unless otherwise specified in the plans. Delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Cones shall be used along the entire shoulder, after the salvaging process, until Asphalt Concrete Composite placement is completed, to help protect the traveling public from the vertical edge created by the salvaging process.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

Work zones for the various construction operations that utilize a pilot car shall not exceed the shoulder segment length being paved at that time.

The bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

Erect only those signs that are applicable to the work in progress. When the Contractor is working at specific work spaces within the project, only those traffic control devices applicable to that operation should be displayed. Non-applicable signs and/or devise shall be removed from the view by the Contractor and stored a minimum of 30 feet from the driving lanes during periods of in-activity. All costs to do this work shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

A shadow vehicle, equipped with flashing amber light and a ROAD MACHINERY AHEAD sign prominently displayed, shall be used in advance of landscaping, clean up, and other mobile work activities. Highway equipment working within traffic or adjacent to traffic shall, at all times, display a flashing or revolving amber light to warn the traveling public. The Contractor shall maintain the driving surface on the project to eliminate hazards to the traveling public. The driving surface is defined as both driving lanes along with both shoulders on the project.

The cost for additional signs shall be paid for at the contract unit price per square foot for Traffic Control. Additional Flagger hours shall be paid for at the contract unit price per hour for Flagging. The cost of additional channeling devices shall be incidental to the contract lump sum price for Traffic Control, Miscellaneous.

Traffic Control, as shown in the Estimate of Quantities, are estimates. Contractor's operation may require adjustments in quantities, either more or less. Payment will be for those signs actually ordered by the Engineer and used.

UTILITIES

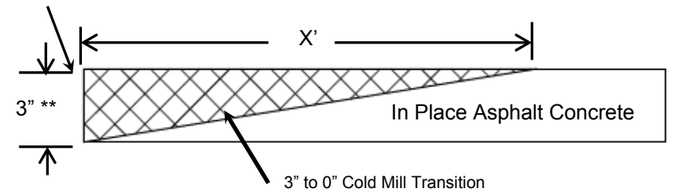
Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

COLD MILLING ASPHALT CONCRETE FOR COUNTY ROAD INTERSECTIONS AND RESIDENTIAL ENTRANCES ALONG US 14, WHERE ASPHALT CONCRETE PAVEMENT EXTENDS BEYOND THE STATE RIGHT-OF-WAY

Distance "X" shall be satisfactory to the engineer, in order to make a smooth transition and proper drainage away from the intersecting highway. 25' minimum at the intersections of paved County Highways.

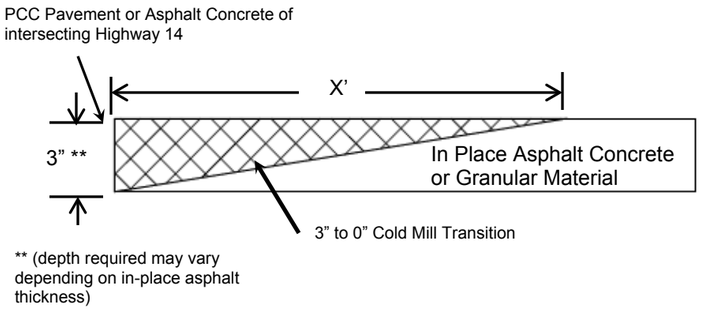
A mill attached to a skid steer shall be used to create a transition joint at residential entrances, where asphalt pavement extends beyond the State Right-of-Way.

Detail 1: At ROW



** (depth required may vary depending on in-place asphalt thickness)

COLD MILLING ASPHALT CONCRETE FOR INTERSECTING ROADWAYS & RESIDENTIAL ENTRANCES ALONG US 14 WITH GRANULAR MATERIAL BEYOND THE STATE RIGHT-OF-WAY



Distance "X" shall be satisfactory to the Engineer, in order to make a smooth transition and proper drainage away from the intersecting highway.

COLD MILLING ASPHALT CONCRETE AND PLACING COLD MILLED MATERIAL

The cold milled material obtained from the project shall be uniformly placed around the corresponding intersection and radius, of the cold milled intersection, and into the shoulder of that intersection near the intersecting highway. The cold milled material shall not be placed on field approaches. All work required to place the cold milled material into the shoulder shall be incidental to Cold Milling Asphalt Concrete and Placing Cold Milled Material. Any removal and placement of granular material (where the entrance is not currently paved to the radius and in order to make a transition for the new asphalt concrete as detailed above) shall be incidental to Cold Milling Asphalt Concrete and Placing Cold Milled Material.

Gradation testing of the cold milled material shall not be required unless deemed necessary by the Engineer.

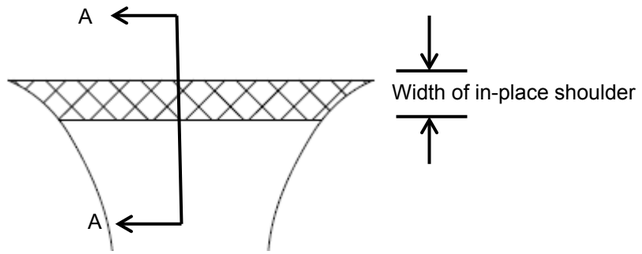
Plans quantity shall be the basis of payment for Cold Milling Asphalt Concrete and Placing Cold Milled Material. No additional measurements shall be made for payment purposes.

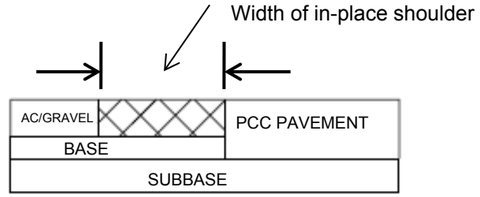
ASPHALT CONCRETE PAVEMENT AND IN PLACE SURFACING REMOVAL ON HWY 14 & 25 SHOULDER SEGMENTS

In order to construct the new asphalt surfacing flush with the adjacent pavement, removal of asphalt concrete pavement shall be completed in a manner according to the bid item Salvage and Stockpile Asphalt Mix and Granular Base Material specification. Refer to the shouldering segment locations on sheets 5-7. The exact limits and locations for the removal of asphalt concrete pavement and in place surfacing removal shall be determined and marked by the Engineer prior to removal. All costs associated with removal of asphalt concrete and granular material shall be paid as Salvage and Stockpile Asphalt Mix and Granular Base Material.

Asphalt concrete and in place surfacing removal at intersecting roads and entrances within the shouldering segments shall be saw cut or cold milled adjacent to the in place existing asphalt concrete, in a manner to provide a vertical edge to tie into the existing pavement. All costs associated with saw cutting, cold milling, salvaging, loading, hauling, and stockpiling shall be incidental to the contract unit price of Salvage and Stockpile Asphalt Mix and Granular Base Material. No additional payment or change in contract unit price for variation in estimate of quantities. Salvage and Stockpile Asphalt Mix and Granular Base Material shall be used for Base Course Salvaged, Asphalt Mix to be incorporated into the shoulders west of Segment 1.

Detail A: Asphalt Concrete and In Place Surfacing Removal on shouldering section of Highway 14 & 25, at Intersecting Roads & Approaches





SEC A-A

PLACEMENT OF SALVAGED ASPHALT AND GRANULAR MATERIAL FROM SHOULDER SEGMENTS

Shoulder segments, where asphalt concrete pavement removal is designated, shall be neatly shaped prior to the placement of Asphalt Concrete Composite placement. Any shaping required shall be incidental to the unit cost of Base Course, Salvaged Asphalt Mix.

Salvaged material from the removal operation on the shouldering segments shall be uniformly placed on the shoulder of US 14 (Starting at the west end of Segment 1, at a 4% slope, flush with the PCC Pavement until all of the salvaged material has been placed, and approximately 7500' on each shoulder) and behind any paved asphalt concrete in front of entrances, in a manner to create a smooth transition onto the newly paved surface. Salvaged material placed on the shoulders shall be placed and compacted to the satisfaction of the Engineer. Scarification of in place granular material shall be completed prior to placement of Base Course, Salvaged Asphalt Mix on shoulders. Any water required for compaction of salvaged material shall be incidental to Base Course, Salvaged Asphalt Mix. Approximately 8 tons of salvaged material shall be placed behind any newly placed asphalt concrete and where granular material extends to the ROW for surfacing. The remaining salvaged material shall be placed on the shoulder west of segment 1. Starting point of placing salvaged material shall be marked by the Engineer. All costs associated with this work shall be incidental to the price for Base Course, Salvaged Asphalt Mix. No additional payment or change in contract unit price for variation in estimate of quantities.

ASPHALT CONCRETE COMPOSITE

The Asphalt Concrete Composite Lift shall be paver laid.

All other requirements in the specifications for Asphalt Concrete Composite shall apply.

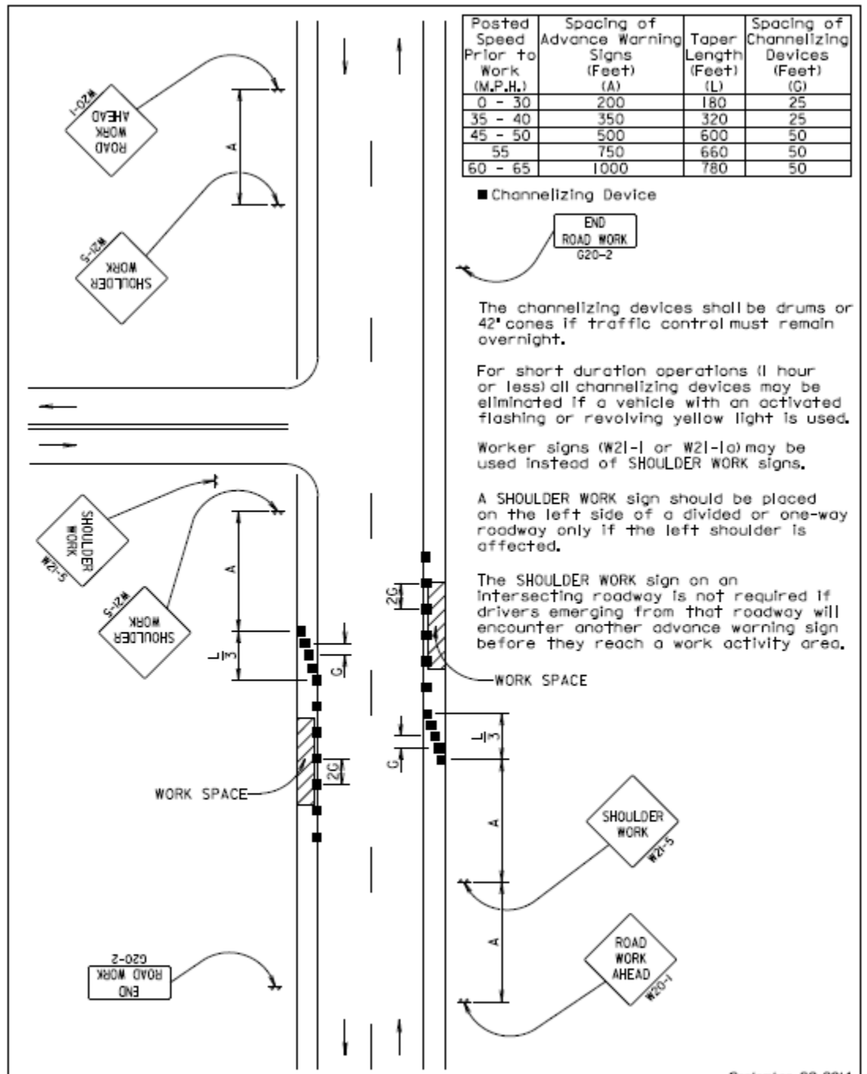
The placement of asphalt concrete shall begin within 1 day of milling any residential or county road that extends past the State Right-of-Way. The Contractor shall be responsible for maintaining temporary ramps at cold milled areas where asphalt concrete placement is not completed the same day as the cold milling operation.

Only one shoulder, of the shoulder paving segments, shall be paved at a time. Both shoulders of a segment will not be allowed to be paved simultaneously. One side will be required to be fully finished with the laydown operation prior to starting the other side. A pilot car shall be utilized for shoulder segments, while finish rolling is being completed on the opposite shoulder, previously paved the same day.

No additional payment or change in contract unit price for variation in estimate of quantities.

BROOMING

A rotary broom shall be used to keep the roadway clean, at all times while work is being completed and after completion of all work, to the satisfaction of the Engineer. Excess asphalt concrete and/or granular material remaining on the mainline, due to the removal and/or resurfacing operations, shall not be permitted. Any excess material on the driving surface shall be cleaned off the same day. Brooming shall be incidental to various bid items for completing the contract.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

END ROAD WORK G20-2

The channelizing devices shall be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

September 22,2014

Published Date: 2nd Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES WORK ON SHOULDERS	PLATE NUMBER 634.03
			Sheet 1 of 1

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W13-1P	ADVISORY SPEED (plaque)	4	30" x 30"	6.3	25.2
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-3	ROAD CLOSED AHEAD	4	48" x 48"	16.0	64.0
W20-7	FLAGGER (symbol)	4	48" x 48"	16.0	64.0
W21-5	SHOULDER WORK	4	48" x 48"	16.0	64.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			290.2

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (C)
0 - 30	200	25
35 - 40	350	25
45 - 50	500	50
55	750	50
60 - 65	1000	50

Flagger

Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

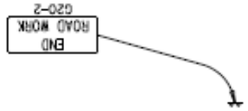
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or 42" cones.

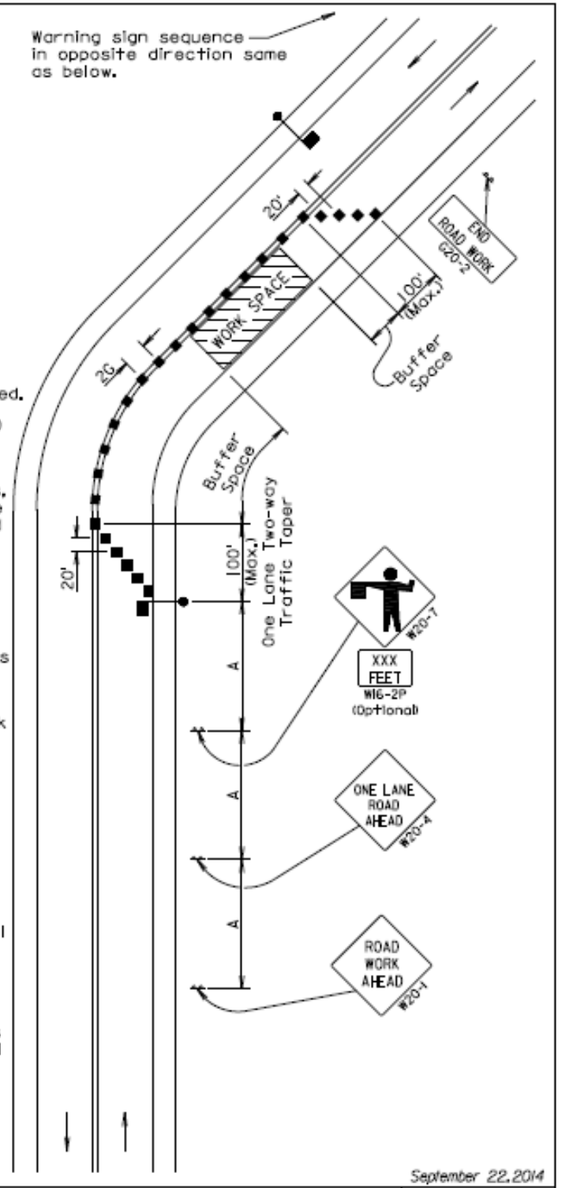
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

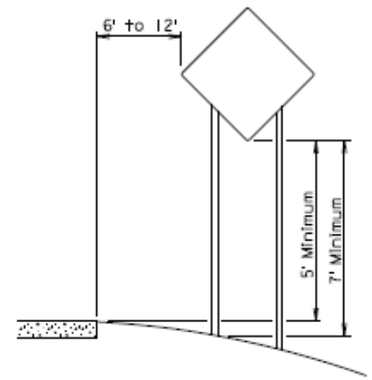
The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.

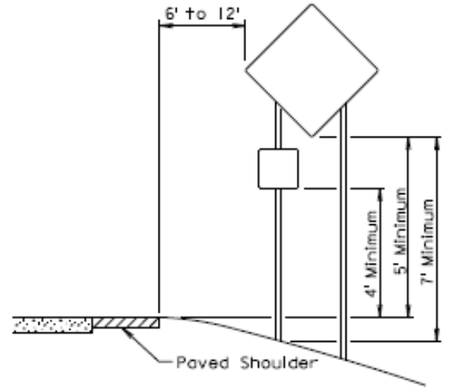


September 22,2014

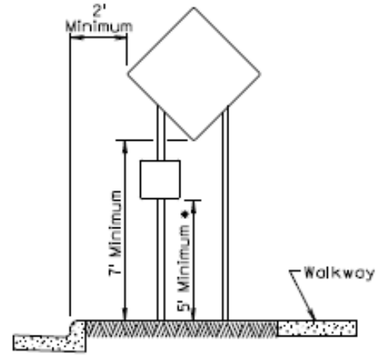
Published Date: 2nd Qtr. 2016	SDDOT	GUIDES FOR TRAFFIC CONTROL DEVICES LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23 Sheet 1 of 1



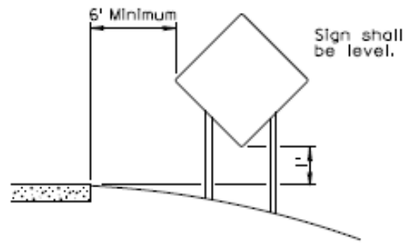
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT

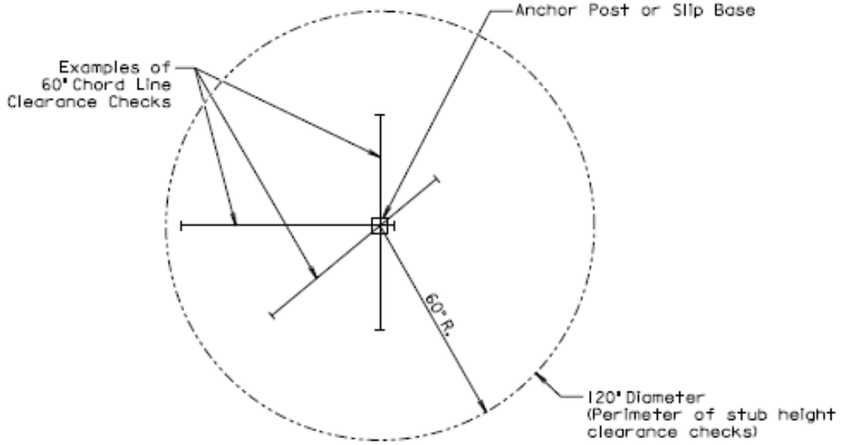


RURAL DISTRICT
3 DAY MAXIMUM
(Not applicable to regulatory signs)

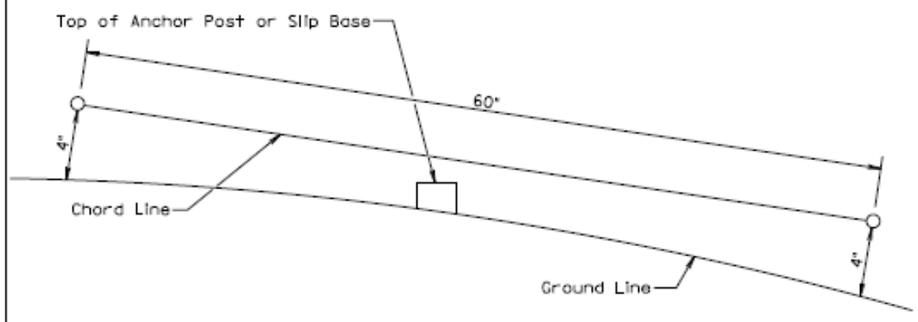
* If the bottom of supplemental plate is mounted lower than 7 feet above a pedestrian walkway, the supplemental plate should not project more than 4" into the pedestrian facility.

September 22,2014

Published Date: 2nd Qtr. 2016	SDDOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85 Sheet 1 of 1



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

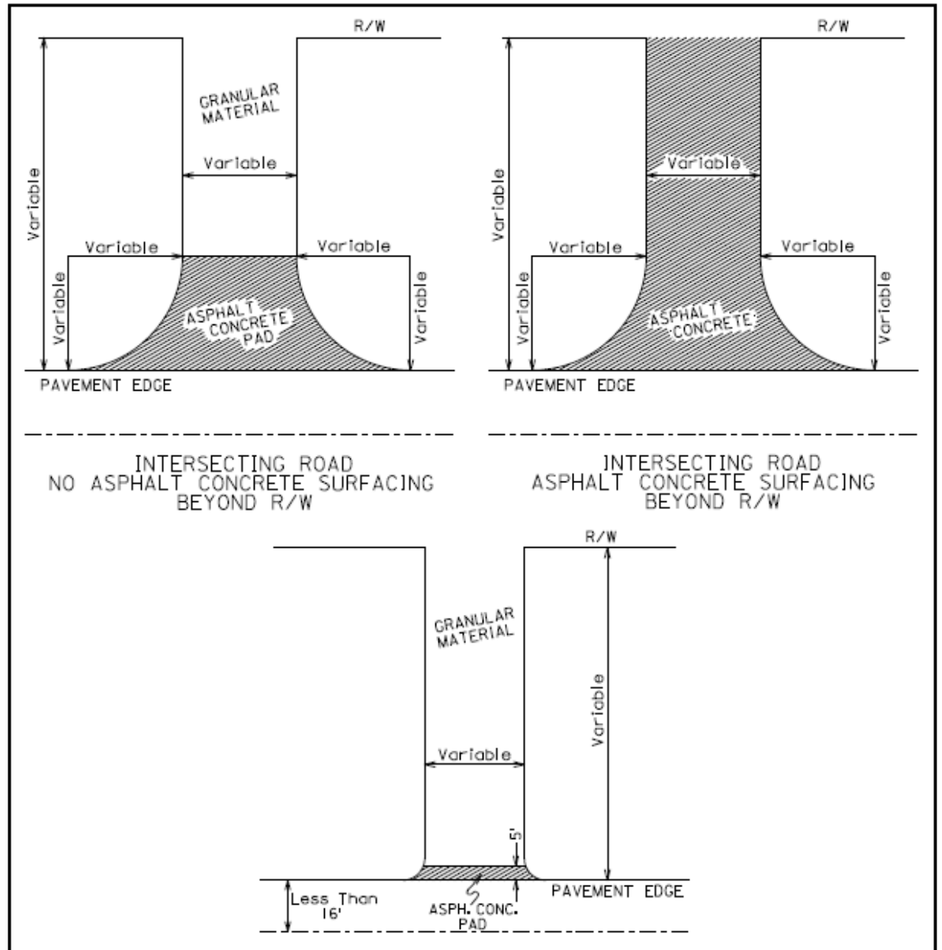
The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 2nd Qtr. 2016	SDDOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1



ENTRANCE

The surfacing details shown on this sheet are provided as a guide for surfacing these facilities. The precise construction limits for situations other than the standards shown will be determined by the Engineer, at the time of construction.

ROADWAY WITH OR WITHOUT SHOULDER

March 31, 2000

Published Date: 2nd Qtr. 2017	SDDOT	RESURFACING OF INTERSECTING ROADS AND ENTRANCES	PLATE NUMBER 320.10
			Sheet 1 of 1